

I CLAIM:

1. A process of producing a non-woven fabric, comprising:

(a) extruding a fiber forming resin through a spinneret to form filaments;

5 (b) passing the filaments through a cooling device;

(c) passing the filaments through a set of first rollers after step (b);

(d) passing the filaments through a heating device after step (c);

10 (e) stretching the filaments by passing the filaments through a set of second rollers after step (d), said second rollers operating at a speed greater than that of said first rollers; and

(f) forming the filaments into the non-woven fabric on
15 a conveyor screen belt which advances in a longitudinal direction.

2. The process as claimed in Claim 1, further comprising drawing the filaments by using a drawing air jet device before step (f).

20 3. The process as claimed in Claim 2, further comprising using a swinging air jet device to swing the filaments to-and-fro downstream of the drawing air jet device, upstream of the conveyor screen belt and in transverse directions which are transverse to the longitudinal direction so that the filaments
25 are formed into wavy patterns which overlap and interlace each other in the transverse directions.

4. The process as claimed in Claim 3, wherein the swinging air jet device is used to produce swinging air currents to

blow the filaments, said swinging air jet device having a plurality of swinging louvers.

5. An apparatus for making a non-woven fabric, comprising:

a spinneret having a plurality of extrusion holes for
5 forming and extruding filaments;

a cooling device disposed downstream of said spinneret for cooling the filaments that exit from said spinneret;

a set of first rollers disposed downstream of said cooling device for drawing the filaments from said spinneret;

10 a heating device disposed downstream of said first rollers for reheating the filaments;

a set of second rollers disposed downstream of said heating device for drawing further the filaments from said first rollers, said second rollers operating at a speed greater
15 than that of said first rollers; and

a conveyor screen belt disposed downstream of said drawing air jet device for forming and advancing the filaments in a longitudinal direction.

6. The apparatus as claimed in Claim 5, further comprising
20 a drawing air jet device disposed downstream of said second rollers for drawing the filaments.

7. The apparatus as claimed in Claim 6, further comprising a swinging air jet device disposed downstream of said drawing air jet device and upstream of said conveyor screen belt for
25 swinging the filaments to-and-fro in transverse directions which are transverse to the longitudinal direction, wherein the filaments are formed into wavy patterns which overlap and interlace each other in the transverse directions.

8. The apparatus as claimed in Claim 7, wherein said swinging air jet device includes a plurality of swinging louvers to produce swinging air currents.

9. The apparatus as claimed in Claim 7, wherein said swinging
5 air jet device includes a nozzle outlet, and a plurality of swinging louvers disposed at said nozzle outlet, said swinging louvers being arranged in a row along a direction transverse to the longitudinal direction.